



Dartmouth College HANOVER · NEW HAMPSHIRE · 03755

Department of Geography

10 June 1974

"Made available under NASA sponsorship
in the interest of early and wide dis-
semination of Earth Resources Survey
Program information and without liability
for any use made thereof."

TO:

Director of Applications, GSFC)
Attention: Mr. John H. Boeckel)
Assistant Director for Operations)
Code 900)
(2 copies))

ERTS Technical Officer, Code 902)
Attention: Mr. Edmund F. Szajna)

Goddard Space Flight Center
Greenbelt, Maryland 20771

ERTS Project Scientist, Code 902)
Attention: Dr. Stanley Freden)

ERTS Scientific Monitor, Code 920)
Attention: Dr. Louis S. Walter)

ERTS Contracting Office, Code 289)
Attention: Mr. James Higgins)

NASA Scientific & Technical Information Facility
Attention: Earth Resources
P.O. Box 33
College Park, Maryland 20740

SUBJECT: Type I Progress Report No. 10 on Contract No. NAS 5-21749 (Land Use
in Northern Megalopolis) (GSFC ID No. U-235)

1. Accomplishments

Our investigation of the utility of the Image-100 system for urban-type land use mapping was completed as planned, with Dr. Lindgren and Mr. Goldstein spending approximately 20 hours each on the machine at the GE Daytona Beach plant prior to transfer to the GE Beltsville facility.

The six-month extension of our ERTS-1 contract will terminate 15 June and the report will be completed during July. During the extension we have been able for the first time to explore briefly but quantitatively the relationship between our ERTS-1 land use map and data bank of northern Megalopolis, the 55-category low-altitude land use map of the State of Connecticut and other types of mapping. The analysis consists of a comparison of a New Haven sample area mapped by the following methods:

(E74-10583) LAND USE IN NORTHERN
MEGALOPOLIS Progress Report (Dartmouth
Coll.) 3 p HC \$4.00

CSCL 08B

N74-28826

Unclas
G3/13 00583

- (1) manual interpretation of ERTS-1 photo-laboratory-derived transparencies, mapping at 1:250,000
- (2) manual interpretation of ERTS-1 images digitally enhanced on the Image-100, mapping at 1:62,500
- (3) manual interpretation of high-altitude-aircraft photo laboratory derived transparencies, mapped at 1:100,000
- (4) manual interpretation of low-altitude aircraft photo-laboratory derived b/w paper prints, mapped at 1:24,000

In addition a qualitative comparison with an automated computer-assisted radiometric interpretation of part of the same sample area by Image-100 will be included.

An up-dating of the time-and-money comparative cost-estimates contained in the pre-extension, so-called "final," report on this contract last August will be included.

A breakthrough in the production of enhanced-contrast color-coded maps has been attained by an innovative small local photo laboratory here at Hanover. A sample product in the form of a full-color print of our land use map of northern Megalopolis, at the original scale of 1:250,000 (approximately 3' x 4') will be provided to Dr. Freden. Previous smaller format versions of this product, done by the best available regional and national laboratories, have been consistently unsatisfactory. The superiority of the "Hathorn/Olson" 35-mm colored slides already has been shown.


2. List of Articles, Reports and Talks.

- a. Paper by Simpson, Lindgren and Goldstein was read by Simpson at the 70th Annual Meetings of the Association of American Geographers, Seattle, 1 May 1974. Title: "Large-Area Land Use from ERTS-1 Imagery".
- b. Paper by Dr. Lindgren was published in the ITC Journal, Vol. 4, 1973, Enschede, The Netherlands. Title: "Urban Information Systems and Remote Sensing".
- c. Talk by Dr. Lindgren was given to the Population Council in New York City on 10 May 1974. Topic: "Demographic Applications of Remote Sensing".
- d. It was recently learned that the testimony of Dr. Simpson relative to ERTS-1, before the Senate Aeronautics and Astronautics Committee in April 1973, also was read into the record of the Senate Committee on Interior Affairs, during their consideration of the national land use Bill shortly thereafter.

3. Data Request Forms Submitted

15 May 1974: A retrospective order was made for the following, relative to the four ERTS-1 scenes which together provide prime coverage of the State of New Hampshire:

- (1) set of digital tapes for July 1973
- (2) set of photo products both for July 1973 and for October 1972.



Robert B. Simpson
Principal Investigator